



# Basic Bridging Compliance

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July 2002

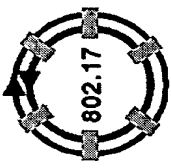
# Objective

Summarize functional delta between basic bridging compliance and enhanced bridging compliance proposals

Summarize technical 802.17 MAC impact resulting from basic bridging compliance and enhanced bridging compliance proposals

Hi-lite basic bridging compliance solution impact to 802.17 MAC

# Terminology



## Remote Address

- An address that is not found on the ring (i.e., an address that is not found within the RPR station topology image)
- A global address

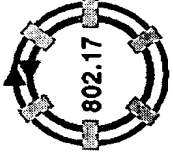
## Local Address

- An address that can be found on the ring (i.e., an address that is found within the RPR station topology image)
- A local address of the ring

## Flood

- A transmission mechanism that ensures all RPR stations see a transmitted packet once, without duplication

# Basic/Enhanced (802.1D/Q) Bridge Functionality



	Basic Transparent Bridging	Enhanced Transparent Bridging
802.1D/Q compliance	✓	✓
Local ring traffic spatial reuse	✓	✓
Transparent bridging traffic spatial reuse	×	✓
Other traffic spatial reuse (e.g., multicast handling)	×	✓

# Basic/Enhanced (802.1D/Q) Bridge Impact on MAC

Basic Bridging Proposal Minimal Requirements	Enhanced Bridging Proposal Minimal Requirements
<ol style="list-style-type: none"> <li>1. Flooding indication support in frame structure</li> <li>2. MAC supports flooding technique(s)</li> </ol>	<ol style="list-style-type: none"> <li>1. Supports basic bridging minimal requirements</li> <li>2. Spatial Reuse Control Sublayer (SRCS) functionality which include SRCS mapping table</li> <li>3. Need to address TCN (Topology Control Notification) message handling <ul style="list-style-type: none"> <li>– Introduction of new RPR TCN control message, or</li> <li>– MAC needs to be aware of MAC client BPDUs</li> </ul> </li> <li>4. SRCS interactions with MAC clients</li> <li>5. Station identifiers in frame format <ul style="list-style-type: none"> <li>– RPR required to support station identifier distribution and uniqueness protocol</li> </ul> </li> <li>6. MAC stripping rules include station identifier recognition</li> </ol>

# Basic Bridging Requirements on 802.17 MAC



1. RPR bridges do not operate in promiscuous mode
2. Flooding indication supported by 802.17 frame
3. MAC flood all packets provided by 802.1D/Q bridge relay client
4. MAC will flood all packets with network destination addresses
5. MAC will replicate/copy packets when flooding indication is set in received packet

# Bridges not Operating in Promiscuous Mode



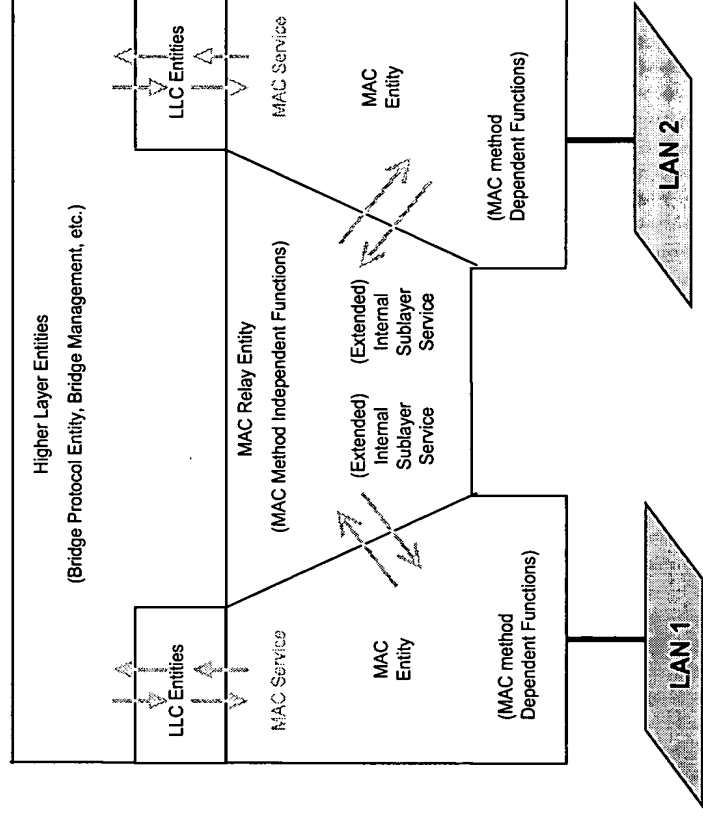
- No impact to MAC
- No impact to MAC reception rules
  - No impact on MAC transmission rules



# MAC Supporting Bridge Client Floods All Packets



ISS/E-ISS upon reception of REQUEST primitive  
will set flooding indication in frame structure

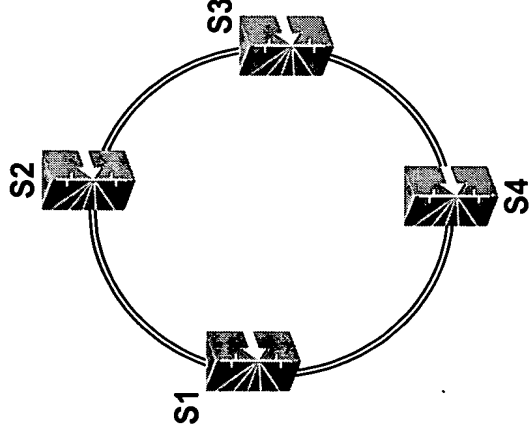




# MAC Floods All Packets with Remote Destination Address

If destination address, found in client REQUEST primitive, is a remote address

- Set flooding indication in frame structure
- Network address identified if not found in topology image



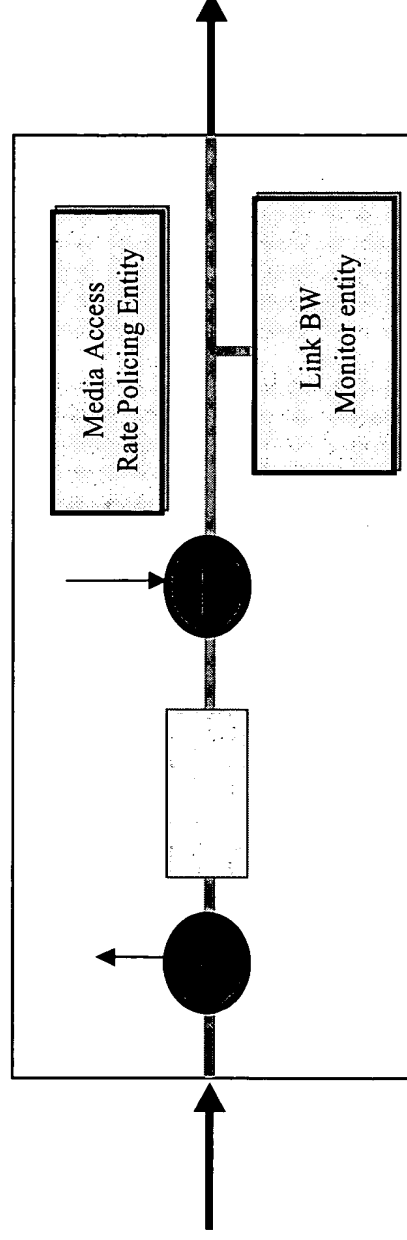
**S1 Station Topology Image**

Dest Station	Primary	CCW	CW
S2	CW	3	1
S3	CW/CCW	2	2
S4	CCW	1	3

# MAC Replicates Packets When Flooding Indication in Frame Structure

## Frame Replication

- Identical to MAC support of broadcast or multicast packet
- The frame is “Dropped” (I.e., passed to appropriate MAC client)
- The frame is forwarded downstream if MAC stripping rules don’t strip (e.g., TTL permits, not destination address, etc.)



# Recommendation/Conclusion



1. Basic bridging compliance proposal minimizes complexity to 802.17 MAC and risk to 802.17 standard
2. Basic bridging compliance proposal can satisfy 802.17 PAR